Docket No. 100200514-1
(F&L Docket No. 084061/0278)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant:	Jon Christopher CONNELLY; Eric W. LOY
Title:	A METHOD AND APPARATUS FOR AUTOMATING THE ROOT CAUSE ANALYSIS OF SYSTEM FAILURES
Appl. No.:	10/804,275
Filing Date:	3/19/2004
Examiner:	Manoskey, Joseph D.
Art Unit:	2113
Confirmation No.:	7427

RESPONSE TO NOTICE OF NON-COMPLAINT APPEAL BRIEF

Mail Stop APPEAL BRIEF - PATENTS
Commissioner for Patents
PO Box 1450
Alexandria, Virginia 22313-1450

Sir:

The following is the Appellants Revised Appeal Brief under the provisions of 37 C.F.R. 41.37, and is being filed in response to the Notice of Non-Compliant Appeal Brief dated February 12, 2008. Per the Notice on Non-Compliant Appeal Brief, support for the features recited in claim 10 and claims 23-25, which were separately argued for patentably, is provided in section 6 of this Response. Also, a correction to the heading is made on each of the pages of this response, with respect to the application serial number.

1. Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a

Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

2. Evidence Appendix

There are no related evidence that will directly affect, be directly affected by or have a bearing on the present appeal, that are known to appellant, the assignee, or the appellant's patent representative. The Evidence Appendix (Section 10), attached hereto, states "None".

3. Related Appeals and Interferences

There are no related appeals or interferences that will directly affect, be directly affected by or have a bearing on the present appeal, that are known to the Appellants, the Assignee, or the Appellants' patent representative. The Related Proceedings Appendix (Section 11), attached hereto, states "None".

4. Status of Claims

The present appeal is directed to claims 1, 2, 4-7, 9-14, 16-21 and 23-25. A copy of the presently pending claims under rejection are attached herein in the Claims Appendix (Section 12).

Claims 1, 5-7, 9-13, 17-21 and 23-25 were finally rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,742,141 to Miller; and claims 2, 4, 14 and 16 were finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Null (Null, Linda, "The Essentials of Computer Organization and Architecture").

5. Status of Amendments

No amendments are being filed concurrently with this Appeal Brief.

6. Summary of the Claimed Subject Matter

The present invention is directed to a method and apparatus for automating the root cause analysis of system failures.

In more detail, as described on pages 5 and 6 of the specification, current processes for troubleshooting system failures and identifying root causes are manually focused, whereby

there is a need to automate the transferring of necessary information for analysis of a failure (see page 7, paragraph 0018 of the specification).

As described in paragraph 0046 of the specification, failure data is stored on both servers and a local support node, whereby a Root Cause (RC) server maintains a history of sequence numbers for events originating on each monitored entity, and whereby a sequence mismatch indicates an inconsistency between the states of the RC server and the entity on which the event originated. In the event of such a mismatch, a resynchronization procedure is initiated, to synchronize the monitored entity and the RC server.

Turning now to the independent claims, independent claim 1 recites:

A method for analyzing the root cause of system failures on one or more computers, comprising:

generating an event when a computer system detects a system failure;

determining the cause of the system failure;

transmitting the event, including the determined cause, from the computer system to a central repository;

analyzing the system failure event in the central repository;

storing the event in a local repository located on the computer system; and

synchronizing the local repository and the central repository,

wherein the synchronizing step comprises:

transmitting missing events in the central repository from the computer system.

Support for the "generating" step in claim 1 may be found in paragraph 0046 of the specification.

Support for the "determining" step in claim 1 may be found in paragraph 0049 of the specification.

Support for the "transmitting" step in claim 1 may be found in paragraph 0049 of the specification ("and a 'cause' event is sent to the RC Server 22.").

Support for the "analyzing" step in claim 1 may be found in paragraph 0058 of the specification.

Support for the "storing" step in claim 1 may be found in paragraph 0059 of the specification ("All availability and cause events received from RC Agents 20 are archived in the Event Repository 62.").

Support for the "synchronizing" step may be found in original claims 7 and 8, and in paragraphs 0060, 0084, 0087, 0093 and 0094 of the specification.

Support for the "transmitting missing events" step may be found in original claims 7 and 8, and in paragraphs 0060, 0084 and 0087 of the specification.

Independent claim 12 recites:

An apparatus for analyzing the root cause of system failures on one or more computers, comprising:

a network;

a local support computer coupled to said network;

a computer system coupled to the network, the computer system programmed to monitor itself and another computer system for system failures, to determine the cause of the system failure, and to transmit system failure events to the local support computer;

storing the event in a local repository located on the computer system; and

synchronizing the local repository and a repository of the local support computer, wherein the synchronizing step comprises:

transmitting missing events in the repository of the local support computer from the computer system.

Support for the "network" element in claim 12 may be found in paragraph 0035 of the specification ("two node cluster C. . . A cluster is a networked grouping . . .").

Support for the "local support computer" element in claim 12 may be found in paragraph 0042 of the specification (RC Server 22).

Support for the "computer system" element in claim 12 may be found in paragraphs 0041 and 0075 of the specification (RC Agent 20).

Support for the "storing" step in claim 1 may be found in paragraph 0059 of the specification ("All availability and cause events received from RC Agents 20 are archived in the Event Repository 62.").

Support for the "synchronizing" step may be found in original claims 7 and 8, and in paragraphs 0060, 0084, 0087, 0093 and 0094 of the specification.

Support for the "transmitting missing events" step may be found in original claims 7 and 8, and in paragraphs 0060, 0084 and 0087 of the specification.

Independent claim 21 recites:

A means for analyzing the root cause of system failures on one or more computers, comprising:

a means for transmitting data from one computer to another,

a local support computer coupled to the means for transmitting data,

a computer system coupled to the means for transmitting data,

a means for the computer system to monitor itself or another computer system for system failures and determining the causes of the failures,

a means for transmitting the causes of the failures to the local support computer;

a local repository located on the computer system for storing the event; and

a means for synchronizing the local repository and a repository of the local support computer,

wherein the synchronizing means comprises:

a means for transmitting missing events in the repository of the local support computer from the computer system.

Support for the "means for transmitting data" element in claim 21 may be found in paragraph 0035 of the specification ("two node cluster C. . . A cluster is a networked grouping . . .").

Support for the "local support computer" element in claim 21 may be found in paragraph 0042 of the specification (RC Server 22).

Support for the "computer system" element in claim 21 may be found in paragraphs 0041 and 0075 of the specification (RC Agent 20).

Support for the "means for the computer system to monitor itself or another computer system" element in claim 21 may be found in paragraphs 0041 and 0075 of the specification (RC Agent 20).

Support for the "means for transmitting the causes" element in claim 21 may be found in paragraph 0049 of the specification ("and a 'cause' event is sent to the RC Server 22.").

Support for the "local repository" element in claim 21 may be found in paragraph 0042 of the specification ("the events are logged on the Local Support Node 12").

Support for the "synchronizing means" element in claim 21 may be found in original claims 7 and 8, and in paragraphs 0060, 0084, 0087, 0093 and 0094 of the specification.

Support for the "means for transmitting missing events" element in claim 21 may be found in original claims 7 and 8, and in paragraphs 0060, 0084 and 0087 of the specification.

Dependent claim 10 recites:

wherein the synchronizing step further comprises:

discarding events that have already been received.

Support for the features recited in dependent claim 10 may be found in paragraph 0087 of the specification ("Duplicate events are simply discarded . . .").

Dependent claim 23 recites:

wherein the missing events correspond to system failure events for which causes were still being determined by the computer system at a time when the central repository made a request for event information to be sent thereto, and for which the causes have subsequently been determined by the computer system.

Dependent claims 24 and 25 recite similar features to the above features recited in dependent claim 23.

Support for the features recited in dependent claims 23, 24 and 25 may be found in paragraph 0084 of the specification.

7. Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection to be reviewed on appeal are: (1) whether the examiner erred in rejecting claims 1, 5-7, 9-13, 17-21 and 23-25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,742,141 to Miller; and (2) whether the examiner erred in rejecting claims 2, 4, 14 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Null (Null, Linda, "The Essentials of Computer Organization and Architecture").

8. Argument

I. It is respectfully submitted that the final rejection of claims 1, 5-7, 9-13, 17-21 and 23-25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,742,141 to Miller is erroneous for at least the following reasons.

a. Independent Claims 1, 12 and 21:

In its rejection of claim 1, the final Office Action asserts that column 19, lines 40-42, lines 57-58, and column 19, line 64 to column 20, line 18 of Miller teaches the transmission of missing events in a central repository from a computer system during a synchronizing step. Applicants respectfully disagree.

In more detail, column 19, lines 40-42 of Miller describes that if a problem cannot be solved by a technical at a central site, the technician can use the customer site software to attempt to solve the problem at the customer site remotely. Such features that allow the technician to remotely log into the computer and thus to try to solve a problem with that remote computer, has nothing at all to do with the remote computer transmitting a missing event in its local repository to a central repository. Note that the technician has the 'event' already, and is trying to resolve it, and so there is no disclosure in this portion of Miller as to the technician receiving another 'event' missing from his/her computer as provided from the customer site computer.

Column 19, lines 57-58 of Miller describes a remote support feature shown in Figure 22 of Miller, whereby, for the same reasoning as provided above, this remote support features has nothing at all to do with the technician receiving a "missing event" from a customer site computer for which he/she is trying to fix. None of the steps shown in Figure 22 of Miller corresponds to a synchronizing of information from a customer computer with information

from a technician's computer, whereby the customer computer sends missing event information to the technician's computer after such synchronizing. Rather, a secure link is established between the technician's computer and the customer computer (see step 441), and the technician examines state information in order to diagnose a problem with the customer computer.

Also, column 19, line 64 to column 20, line 18 of Miller describes features by which the technician can cause the customer site software to access requested state information and to return its value to the technician at the central repository. Again, this has nothing at all to do with the technician receiving a "missing event" from a customer site computer for which he/she is trying to fix. **No synchronization between the customer site computer and the technician's computer** is disclosed or suggested in this portion of Miller.

In the "Response to Arguments" section of the final Office Action, its argues that the updating of a log in a master knowledge base meets the specific features recited in the independent claims. However, this is not the case, since the updating of a log based on new information provided from a customer site does not disclose or suggest the synchronizing of information from the customer site with information at a technician site, but rather it just signifies that the log information at the technician site is updated whenever new log information is provided to it, whereby this is done without any synchronization, since Miller does not disclose or suggest the need to synchronize information between two locations. Note that the synchronizing takes up transmission bandwidth, and thus it would not have been obvious for one skilled in the art to have done this, since Miller clearly feels that his system does not require such over-use of transmission bandwidth.

Accordingly, since Null does not rectify the above-mentioned deficiencies of Miller, independent claim 1 is patentable over the cited art of record.

Independent claims 12 and 21 recite similar features to those discussed above with respect to independent claim 1, and thus those claims are also patentable over the cited art of record.

b. Dependent claim 10:

Dependent claim 10 is patentable for additional reasons beyond the reasons given above for its base claim 1. Dependent claim 10 recites that the synchronizing step comprises discarding events that have already been received. The final Office Action incorrectly asserts that column 18, lines 5-10 of Miller teaches these features. Rather, column 18, lines 5-10 of Miller describes that a list of entries is transmitted to a configuration analyzer, which compares it to a list generated of the customer knowledge base extraction, and uses the incremental update generator to package the set of changes needed from the master knowledge base. There is no teaching or suggestion in this portion of Miller as to discarding of any entry list information (or any other information for that matter).

In the Response to Arguments section of the final Office Action, it asserts that since Miller teaches using an incremental update, this signifies discarding of events that have already been received. Appellants respectfully disagree, since all this means is that Miller sends less information from one location to another location, whereby the incremental updating of information does not correspond to discarding of any information. That is, if information "A1B2C3D4" was sent from computer 1 to computer 2, and then computer 1 sent D5 to computer 2, this does not mean that computer 2 then discards the already received information "A1B2C3", but rather it means that computer 2 modifies the information "A1B2C3D4" to "A1B2C3D5".

Accordingly, dependent claim 10 is patentable for these additional reasons, beyond the reasons given above for its base claim 1.

c. Dependent claims 23-25:

Dependent claims 23-25 are patentable for additional reasons beyond the reasons given above for their respective base claim. With respect to the rejection of dependent claims 23-25, the final Office Action incorrectly asserts that column 20, lines 3-17 of Miller teaches the features recited in those claims. Rather, column 20, lines 3-17 of Miller describes that a technician can choose to use an engine primitive that will cause the customer site software to call a primitive, and to return results for review by the technician. The customer site software implements the chosen action, and the server software records the action and its results in a

log, and then the process returns to handle the next action. Again, like the arguments made above, no synchronization is performed in the system of Miller, but rather a technician sequentially analyzes problems of a customer site computer by choosing engine primitives to cause the customer site computer to perform particular actions, and once those actions have been made and logged, the entire log is available for review to create a new entry in a master knowledge base to handle a particular problem. In more detail, "system failure events for which causes **were still being determined** by the computer system at a time when the central repository made a request" does not occur in the system of Miller, but rather "system failure events for which causes **are to be determined** by the computer system at a time when the central repository made a request" occurs in the system of Miller. This time distinction is important, and results in a totally different operating system of the invention of claims 23-25 as compared to the system of Miller.

Accordingly, dependent claims 23-25 are patentable for these additional reasons, beyond the reasons given above for their respective base claim.

II. It is respectfully submitted that the final rejection of claims 2, 4, 14 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Miller in view of Null (Null, Linda, "The Essentials of Computer Organization and Architecture"), is erroneous for at least the following reasons.

Since Null does rectify the deficiencies of Miller as discussed above in Section 8.), Part I., claims 2, 4, 14 and 16 are patentable over the combined teachings of those two references.

9. Conclusion

In view of above, Appellants respectfully solicit the Honorable Board of Patent Appeals and Interferences to reverse the rejections of the pending claims and pass this application on to allowance.

Respectfully submitted,

Date February 19, 2008

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10. EVIDENCE APPENDIX

None

11. RELATED PROCEEDINGS APPENDIX

None

12. CLAIMS APPENDIX

LIST OF THE CLAIMS ON APPEAL (WITH STATUS IDENTIFIERS)

1. (Previously Presented) A method for analyzing the root cause of system failures on one or more computers, comprising:

generating an event when a computer system detects a system failure;

determining the cause of the system failure;

transmitting the event, including the determined cause, from the computer system to a central repository;

analyzing the system failure event in the central repository;

storing the event in a local repository located on the computer system; and

synchronizing the local repository and the central repository,

wherein the synchronizing step comprises:

transmitting missing events in the central repository from the computer system.

2. (Original) The method of claim 1, further comprising:

re-transmitting the event if a receipt confirmation message is not received from the central repository.

3. (Canceled).

4. (Previously Presented) The method of claim 1, further comprising:

holding the event in a queue if a receipt confirmation message is not received from the central repository; and

re-transmitting the event in the queue after a period of time.

5. (Original) The method of claim 1, further comprising:

determining if the system failure was due to a hardware problem by analyzing a file log.

6. (Original) The method of claim 1, further comprising:

determining if the system failure was due to a software problem by analyzing system core files.

7. (Previously Presented) The method of claim 1, further comprising:

assigning a sequence number to each event generated;

receiving a status request from the central repository; and

synchronizing the local repository and the central repository if the sequence number does not match the expected sequence number.

8. (Canceled).

9. (Previously Presented) The method of claim 1, wherein the synchronizing step further comprises:

transmitting missing events in the local repository from the central repository.

10. (Previously Presented) The method of claim 1, wherein the synchronizing step further comprises:

discarding events that have already been received.

11. (Original) The method of claim 1, further comprising:

retransmitting the information stored in the central repository to another computer system for further analysis.

12. (Previously Presented) An apparatus for analyzing the root cause of system failures on one or more computers, comprising:

a network;

a local support computer coupled to said network;

a computer system coupled to the network, the computer system programmed to monitor itself and another computer system for system failures, to determine the cause of the system failure, and to transmit system failure events to the local support computer;

storing the event in a local repository located on the computer system; and

synchronizing the local repository and a repository of the local support computer,

wherein the synchronizing step comprises:

transmitting missing events in the repository of the local support computer from the computer system.

13. (Original) An apparatus of claim 12, further comprising:

the local support computer programmed to collect and analyze the system failure information.

14. (Original) An apparatus of claim 12, further comprising:

the computer system programmed to re-transmit the event if a receipt confirmation message is not received from the local support computer.

15. (Canceled).

16. (Previously Presented) An apparatus of claim 12, further comprising:

the computer system programmed to hold the event in a queue if a receipt confirmation message is not received from the central repository, and to re-transmit the event in the queue after a period of time.

17. (Original) An apparatus of claim 12, further comprising:

the computer system programmed to determine if the system failure was due to a hardware problem by analyzing a file log.

18. (Original) An apparatus of claim 12, further comprising:

the computer system programmed to determine if the system failure was due to a software problem by analyzing system core files.

19. (Original) An apparatus of claim 14, further comprising:

the computer system programmed to assign a sequence number to each event generated;

the local support computer programmed to send a status request to the computer system, and to synchronize the local repository with the local support computer if the sequence number does not match the expected sequence number.

20. (Previously Presented) An apparatus of claim 12, further comprising:

a remote support computer connectable to the local support computer for receiving system failure data from the local support computer.

21. (Previously Presented) A means for analyzing the root cause of system failures on one or more computers, comprising:

a means for transmitting data from one computer to another,

a local support computer coupled to the means for transmitting data,

a computer system coupled to the means for transmitting data,

a means for the computer system to monitor itself or another computer system for system failures and determining the causes of the failures,

a means for transmitting the causes of the failures to the local support computer;

a local repository located on the computer system for storing the event; and

a means for synchronizing the local repository and a repository of the local support computer,

wherein the synchronizing means comprises:

a means for transmitting missing events in the repository of the local support computer from the computer system.

22. (Canceled).

23. (Previously Presented) The method of claim 7, wherein the missing events correspond to system failure events for which causes were still being determined by the computer system at a time when the central repository made a request for event information to be sent thereto, and for which the causes have subsequently been determined by the computer system.

24. (Previously Presented) The apparatus of claim 12, wherein the missing events correspond to system failure events for which causes were still being determined by the computer system at a time when the repository of the local support computer made a request for event information to be sent thereto, and for which the causes have subsequently been determined by the computer system.

25. (Previously Presented) The means for analyzing of claim 21, wherein the missing events correspond to system failure events for which causes were still being determined by the computer system at a time when the repository of the local support computer made a request for event information to be sent thereto, and for which the causes have subsequently been determined by the computer system.